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COMMENTS ON A SHAPE REQUIREMENTS STUDY

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COMMENTS ON A SHAPE REQUIREMENTS STUDY

During the recent European trip the authors spent a week at SHAPE Headquarters at the request of Colonel R. Worden (USAFE), a member of the Plans, Policy, and Operations Division, SHAPE Headquarters. At the time the Plans Branch of the Division was engaged in a 1956 requirements study which had been requested by General Grunther. At the time we arrived on the scene there appeared to be a considerable amount of confusion in the minds of the participating officers as to what a requirements study meant and how it should be carried out.

After a careful look at the formulation and the progress on the study so far, we decided that the best thing we could do would be to shed some light on the basic interactions and to suggest a formulation which would be consistent and at the same time applicable to the problem at hand. This paper is reproduced from a memorandum which the authors prepared for Colonel Worden.

These informal remarks are based on two days' conversation with you and members of the Plans Division. Consequently, it would be foolish to claim that they represent in any sense definitive thinking on the difficult subject of military requirements. Instead, our attempt here is to direct our remarks to the specific problem you are facing, to take account of the difficulties and limitations under which you have to operate and to propose our approach to the requirements problem which appears feasible within your specific terms of reference.

Stated in simplest terms, the requirements problem is to determine the minimum force required to fulfill a stated military objective.

The word "minimum" is essential to this statement, for it is easy enough to conceive of a force that will fulfill the objective: all one requires is superiority over the enemy in each category of weapons. The real problem is how small the force can be and still do the job.

Simple as it sounds, the problem in this formulation is beset with very grave conceptual difficulties which at the present state of knowledge appear

to make it well-nigh incapable of solution. Here are some of them:

a. What do we mean by a "minimum" force? It is entirely probable that several forces of different compositions will be found which appear to do the job. One such force, for example, may have a large number of ground divisions, a large number of air groups and a relatively small A-bomb stockpile. Another force would require a drastically smaller number of conventional forces and a very large number of A-bombs. Which should be selected as a minimum? One way out is to say that the minimum force is the one that will cost least in dollars to produce. But can a large number of A-bombs be produced in time to meet the requirements; what should one do about forces in being and ones that are already programmed? One cannot just assume that the transition can be accomplished by junking what we have now in favor of the shiny new weapons.

Thus, determination of what a minimum force means runs directly into the problem of lead time, feasibility and conversion to new weapons.

b. A difficulty no less real arises from an attempt to describe the military objective that is to be met. Here we can always state the mission in general terms to "win air superiority" to preserve the integrity of Western Allies, etc. But what does this mean in terms of the force relationship between ourselves and the enemy that we want to establish and when and where do we want to attain it? If in the present problem, for example, we have pushed the enemy to the Elbe by D + 30 can we consider the job so finished? If not, what reserves must we have on hand to finish the job?

This problem of stating the objective is not solvable in precise terms because we just do not know what it really means to win a war. It can be treated approximately, however, by establishing, on the basis of military judgment, proximate goals and estimated reserve requirements which should be on hand when these goals are achieved. This need for a clear and

realistic statement of the objective is critically important to the requirements problem and it is shortsighted to assume that war gaming will somehow automatically produce it.

c. Given the fact that we could somehow resolve the question of objectives and the question of what is meant by the minimum, one is faced with the problem of computing the military effectiveness of a given force in attaining this objective. To be sure, war gaming based on past experience provides us with pretty sound judgments of the outcome of combat between opposing forces in a given situation. But these judgments are admittedly very rough and the range of possible errors sheds considerable doubt on attempts to compute some kind of minimum requirement.

Thus the very best judgment we can apply to the interaction of forces in a war game will produce only very approximate answers.

d. These approximations are made even worse by the fact that a long term requirements study must deal with new as yet untried weapons. The difficulty here is of two kinds: assumptions have to be made about the dates of operational readiness of the weapon and, further, given the readiness, estimates of performance often have to be made without reference to previous experience.

In view of the enumerated difficulties (and there are several other fundamental ones that could be added), it is proper to inquire whether there is any hope in an analytic approach to the requirements problem and whether it would not be better to rely on outright military judgment.

The answer is that a great deal can be done by use of the analytic approach provided the requirements problem is restated in more realistic terms.

A more realistic approach is to admit from the beginning that, even if a solution could be obtained in purely military terms, political and economic considerations will play as great, if not greater, role in selection of the

final force goals. This means that, independently of the military solution, the final force goals will fall within rather narrow brackets determined by the capability and the willingness of the NATO countries to support them.

In the light of these considerations a pertinent way to formulate the requirements question is: "In the light of the information which has become available since the present provisional force goals have been established, do the anticipated forces have the capability of fulfilling the assigned military task?" (The new "information" includes such things as slippage, development of new weapons, e.g., tactical A-bombs, guided missiles, etc., and new intelligence data on enemy capability); and, "If these forces do not appear capable, what are the areas of force deficiency which need to be remedied?"

In principle this new formulation does not resolve any of the conceptual problems connected with the original formulation. The same decisions and the same measurements remain to be made. Practically, however, the problem is made considerably easier because much rougher approximations are now acceptable in the solution.

It cannot be over-emphasized that this formulation does not arbitrarily subordinate the military problem to the economic-political problem. Rather, it makes a usable military solution possible whereas a purely military formulation makes such solution extremely dubious.

What will be the nature of the solution in this formulation? One possible (and hoped for) answer is that the programmed forces appear to be adequate. Another possible answer may be that specific force deficiencies (which can be made up within the economic-political constraints) developed in the process of solution, need to be remedied. A third kind of answer is that the gap between the programmed and the required forces appears to be so large that the present solution can give no indication of the extent of

the deficiencies: The force is totally inadequate for the job.

In the latter case the following courses of action are possible:

a. The economic-political constraints are re-examined, new much higher goals are tentatively selected and the problem solved once more to determine whether the higher goals are adequate to fulfill the military task.

b. It is decided that large increases in forces are altogether unfeasible and a modification in mission is introduced which reduces the military task. The problem is solved once more to determine whether the force is adequate for the new task.

c. It may be decided that neither a. nor b. is acceptable for military-economic-political reasons. About the only thing one can do now is to keep a stiff upper lip and start scurrying around for some new technological improvements which will increase the efficiency of the force without requiring a large increase in force goals. Introduction of the tactical A-bomb and of the Allied missile capability into the planning are just such improvements.

The new weapon (or weapons) is now introduced into the problem and it is solved once more.

At this stage it is extremely important to give careful interpretation to the results. If the estimates of the effect of conventional weapons have been rough, the new weapons will be measured in even rougher terms. Furthermore, it is a natural human tendency to pin all hopes on the bright new weapons. Particularly, since it is very probably not yet operational, most of the operational difficulties cannot be properly anticipated.

It is critically important, therefore, to regard the effects of new weapons as provisional and not to adopt them for planning purposes until operational data becomes available. In no case, for example, should the anticipated effect of new weapons be used to scale down already established

force requirements. If the new weapon appears very promising, about the two principal conclusions that can legitimately be made are: (i) A moderate relaxation of the stiff upper lip and, (ii) an increased effort to accelerate the date of its operational readiness.

At all times it is also important to keep in mind two estimates of the military effectiveness of the force: (a) The estimate without the new weapon and (b) The estimate with the new weapon. A sound basis for force planning probably lies between these two extremes.

At this stage it is appropriate to comment on what is meant by a "solution" in the cases discussed above. It is common to divide the problem into a set of "imponderables" (what is the Russian A-bomb stockpile, how will he attack, how many tactical bombs will we have, etc.?) and a set of factors that presumably are relatively well understood. The imponderables are then reduced to a set of assumptions and a fairly elaborate computation of the capability of the force is performed under these assumptions. The results must forever remain in doubt because a change in assumptions may change them by several hundred percent. (This point is illustrated below in a discussion of the assumptions used in the present problem.)

Under these conditions the problem really degenerates into a statement of assumptions which must be satisfied in order for the particular solution to be true.

While such mental exercise is perfectly admissible, it fails to achieve the objective of the problem for two reasons: (a) The original question as to whether the programmed forces are adequate is not answered. (b) The assumptions made in the problem very probably will not hold. Furthermore, it is not clear that this is the minimum set of assumptions which must hold if our mission is to be fulfilled. (For example, while this may sound like rank heresy, it has not yet been conclusively proven that the presence of

A-bombs at H-hour is absolutely essential to the success of our A-bomb campaign.)

If the problem is to be prevented from degenerating in this manner, a fairly fundamental difference in approach is indicated. Instead of a fairly elaborate computation under one set of assumptions (which may consume the entire time period available for solution), one has to perform a series of less elaborate computations under different sets of assumptions. The result will be to sift the really important assumptions from less important ones and will form a good basis for a calculated risk decision as to whether the programmed force is adequate.

In the light of the preceding remarks, it is possible to discuss some of the characteristics of the present problem.

1. As now formulated, it appears to be an effort to determine whether the NATO 1956 force goals are adequate in a situation wherein tactical A-bombs are available to both the Soviet Union and NATO, and a guided missile capability is available only to the NATO forces. Other possible situations not considered, if one wants to peg the study to a 1956 date, are those in which neither side has a missile capability, and in which both sides have that capability. The main point here is the difference between pegging a study to a date, and to a particular situation which may or may not hold at a particular date.

2. Thus in the situation considered, not only is the NATO missile program completely operational but also the Soviet Union, with no such capability whatsoever, has chosen that particular time to start the war. This situation seems a most improbable time for the start of a war; much more probable would be either before NATO acquires such a missile capability or after the Soviet Union acquires some capability of their own. Further, such a situation appears quite unstable in time.

3. Under the above situation, the guided missile capability and A-bomb delivery capability are assumed to be invulnerable to enemy attack. A change in these assumptions would change radically the aspects of the problem. For instance, an assumption of certain vulnerability of the missile capability might well require a much greater effort for the atomic delivery force, resulting in the necessity of a closer inquiry into both their vulnerability and their adequacy to perform this increased mission.

4. Of critical importance are the assumptions regarding the amount of strategic warning and the measures taken. Tied in with this are the assumptions regarding the Soviet strategy of a massive build-up, thus providing said warning, and the accompanying assumption of the location in place of the necessary atomic weapons. The effect of changing these assumptions could be far-reaching; however, as mentioned earlier, it is not self-evident that some of these assumptions could not be changed to some extent. For instance, it is not clear what would ensue if the Soviet Union, instead of a massive build-up, should attempt strategic surprise by striking from a more relaxed position, with the objective, among others, of capturing or knocking out the missile sites and control stations.

5. As actually conducted, the ground and air war games are played on parallel lines, with the ground picture being developed unilaterally, assuming either explicitly or implicitly the desired air action, without regard either to the actual capability, or the timing of such action. Later, then, the air game is played, attempting to fill in the generated requirements. If the problem is as stated under 1, this type of approach cannot give a realistic answer, and the whole idea of the war-gaming approach is invalidated.

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